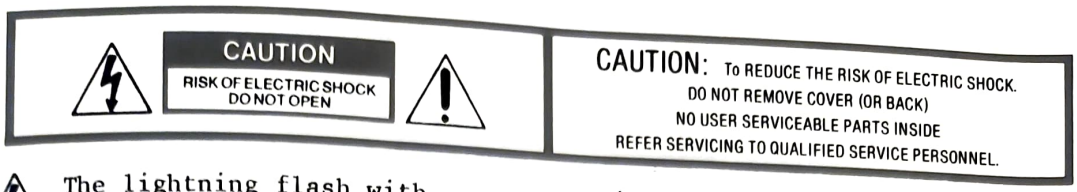
Ikegami

OPERATING
&
INSTRUCTION MANUAL
MODEL ITC-120
SINGLE TUBE COLOR CAMERA

OUTDOOR USE WARNING
WARNING-TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: To REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFEGUARDS

* Read Instructions - All the safety and operating instructions should be read before the appliance is operated.

* Retain Instructions - The safety and operating instructions should be retained for future reference.

* Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.

* Follow Instructions - All operating and use instructions should be followed.

* Cleaning - Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

* Attachments - Do not use attachments not recommended by the video product manufactures as the may cause hazards.

* Water and Moisture - Do not use this video product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

* Accessories - Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

* Ventilation - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug, or other similar surface. This video product should never be placed near or over a radiator or hear register. This video product should bot be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

* Power Sources - This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.

* Grounding or Polarization - This video product is equipped with a polarized alternating current line-plug (a plug having one blade wider than the other) or a 3-wire grounding-type plug (a plug having a third grounding pin). This is a safety feature. The plug having one blade wider than the other will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, try reversing the plug. The plug having a third grounding pin will only fit into a grounding-type power outlet. If the plug should fail to fit, contact you electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug or the grounding-type plug.

* Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

* Lighting - For added protection for this video product receiver during a lighting storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the video product due to lighting and power-line surges.

* Power Lines - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

* Overloading - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

* Object and Liquid Entry - Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product.

* Servicing - Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

* Damage Requiring Service - Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  a. When the power-supply cord or plug is damaged.
  b. If liquid has been spilled, or objects have fallen into the video product.
  c. If the video product has been exposed to rain or water.
  d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
  e. If the video product has been dropped or the cabinet has been damaged.
  f. When the video product exhibits a distinct change in performance - this indicates a need for service.

* Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

* Safety Check - Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.

TABLE OF CONTENTS

		Page
1.	GENERAL DESCRIPTION	1
2.	FEATURES	1
3.	HANDLING PRECAUTIONS	2
4.	SYSTEM CONFIGURATION	3
5.	MAJOR OPERATING CONTROLS	7
6.	FUNCTION	13
7.	INSTALLATION PRECAUTIONS/CONNECTIONS	19
8.	OPERATING PROCEDURE	30
9.	SPECIFICATIONS	36

1. GENERAL DESCRIPTION

The ITC-120 is a single tube high-quality color CCTV camera, using a high resolution and high sensitivity Newvicon tube.

It features a specially-designed compact camera head, and optional accessories such as lens variation, 1.5 and 4 inch viewfinders, detachable battery, AC power box and shoulder pad.

Furthermore, it is possible to remote-control the ITC-120 up to 300 meters away using an optional remote control unit.

It is provided with a color GENLOCK function featuring the multi-functional camera in a wide variety of applications from CCTV monitoring to a total CCTV system.

2. FEATURES

2.1 High Resolution/High Sensitivity

The high-resolution Newvicon tube, with stripe filter of 5 MHz carrier frequency, design features high resolution and high sensitivity design with horizontal resolution of 350 TV lines and minimum scene illumination of 10 Lux (at F1.2).

2.2 Auto White Balance/Memory Backup

The auto white balance circuit is provided for the D/A converter of 6 bits and with a digital memory function, allowing single-switch operation of the white balance adjustment.

A memory backup function makes it possible to store adjusted values for more than one month after the power supply is switched off.

2.3 Stable Color Reproduction

The single tube eliminates registration misadjustment, for correct and stable color reproduction.

2.4 Adoption of LSIs and Chip Parts

A lot of ICs and LSIs are used together with comprehensive chip parts for stable operation of the electronic circuitry.

2.5 GENLOCK

The GENLOCK circuit is provided for subcarrier phase adjustment, enabling color GENLOCK with external VBS or BBS signal.

2.6 A Wide Variety of Lens Variations

With the C-mount lens mount, almost all C-mount lenses for CCTV are interchangeable.

2.7 In-built Bias Light

The in-built bias light minimizes image lag.

2.8 Standby Switch

Consumption power while awaiting shooting is saved with the standby switch.

2.9 Compact, Light and Solid Construction

With its aluminum diecast construction, the ITC-120 is compact, light and solid.

2.10 Versatile optional accessories

2.10.1 1.5-inch viewfinder for a handy video camera.

2.10.2 Detachable battery, handle and shoulder pad for a handy video camera.

2.10.3 Power zoom lens for a handy video camera.

2.10.4 4-inch viewfinder suitable for a mini studio video camera.

2.10.5 AC power box for the AC power supply.

2.10.6 Remote control unit allowing remote control operation up to 300 meters away.

3. HANDLING PRECAUTIONS

3.1 Keep the camera case covers closed. Opening them may expose you to internal high voltage or other hazards. As the internal adjustments require dedicated instruments, refer all servicing to qualified service personnel.

3.2 Be sure not to drop the camera or let it be bumped or vibrated violently.

3.3 Do not use the camera at high or low temperatures beyond the ambient temperature range of -5°C and +45°C, as failures may result. Keep the camera away from moisture or dust.

3.4 Do not aim the camera at the sun or strong light as the camera tube may become inoperative as a result of burn-in. Be sure to use the lens cap after use of the camera.

3.5 Do not use the camera in an environment with strong magnetic or electrical fields.

4. SYSTEM CONFIGURATION

4.1 Standard Configuration

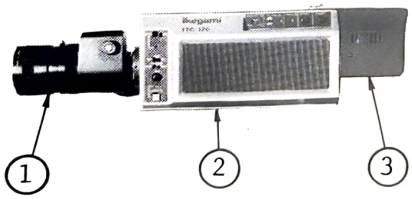
4.1.1 Camera head ITC-120 1 unit

4.1.2 Accessory

Remote/DC (RCU) connector plug 12 pins

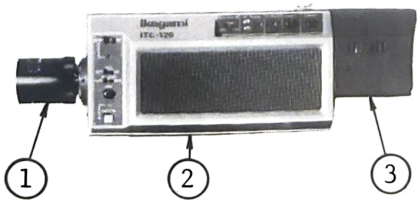
4.2 Optional Configuration

4.2.1 For AC operation



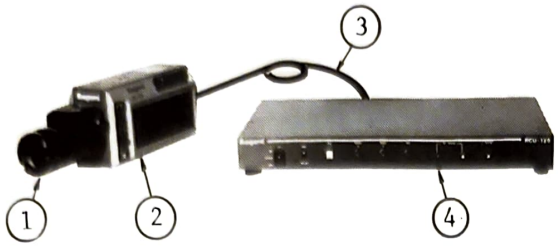
① Lens
② Camera Head ITC-120
③ AC Power Box AC-120

4.2.2 For monitoring



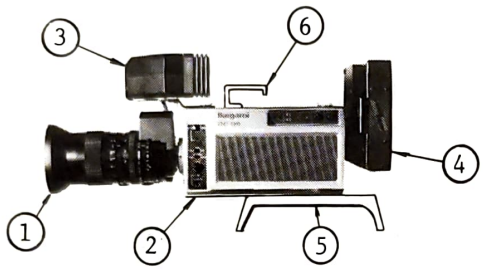
① Auto Iris Lens
(Same as B/W Camera)
② Camera Head ITC-120
③ AC Power Box AC-120

4.2.3 For remote control operation



① Lens
② Camera Head ITC-120
③ RCU Cable
(15m - 300m Max)
④ RCU-120

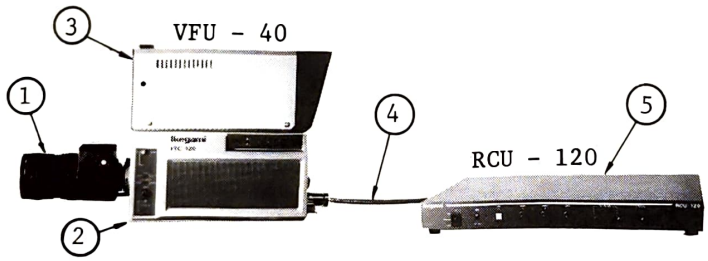
4.2.4 Use as a handy video camera



① Power Zoom Lens
② ITC-120
③ 1.5"VF VFU-15
④ BATTERY
⑤ Shoulder Pad
⑥ HANDLE

4.2.5 Use with the 4-inch viewfinder

(AC-120 cannot be connected when the 4-inch viewfinder is used.)



① Lens
② Camera Head
③ 4"VF VFU-40
④ RCU cable
⑤ RCU-120

4.2.6 Interchangeable lens

List of Interchangeable Lenses (Optional)

Type of lens	Maker	Model name	F stop	Zoom ratio	Focus length	Remarks
Fixed focus auto iris lens	Chugai	MCA0813APC	1.3	-	8.5 mm	
Fixed focus auto iris lens	Chugai	MCA1213APC	1.3	-	12.5 mm	
Fixed focus auto iris lens	Chugai	MCA1613APC	1.3	-	16 mm	
Fixed focus auto iris lens	Chugai	MCA2514APC	1.3	-	25 mm	
Fixed focus auto iris lens	Chugai	MCA5018APC	1.3	-	50 mm	
Fixed focus auto iris lens	Cosmicar	C814BEX-2	1.4	-	8 mm	
Fixed focus auto iris lens	Cosmicar	B1214DEX-2	1.4	-	12.5 mm	
Fixed focus auto iris lens	Cosmicar	C1614EX-2	1.4	-	16 mm	
Fixed focus auto iris lens	Cosmicar	B2514CES-3	1.4	-	25 mm	
Fixed focus auto iris lens	Cosmicar	B5018AES-3	1.8	-	50 mm	
Fixed focus auto iris lens	Cosmicar	B7518ES-3	1.8	-	75 mm	
Auto iris power zoom lens	Cosmicar	C6Z1218M2ESA-2	1.8	x6	12.5 - 75 mm	
Auto iris power zoom lens	Cosmicar	C10Z1014M2EMA-2	1.4	x10	10.5 - 105 mm	
Auto iris power zoom lens	Cosmicar	C14Z1019M2ESA-2	1.9	x14	10 - 140 mm	
Control box for the above	Cosmicar	MZ-5B				
Auto iris power zoom lens	Canon	J6X11REA-IA	1.4	x6	11 - 70 mm	
Auto iris power zoom lens	Canon	J10X11REA-IA	1.6	x10	11 - 110 mm	
Control box for the above	Canon	CC-8T				
Cable for the above	Canon	4 core 10 m				
Manual zoom IG lens	Cosina	MEV-II	1.4	x6	12.5 - 75 mm	
Power zoom IG lens	Canon		1.4	x6	11 - 70 mm	To be decided
			1.6	x10	11 - 110 mm	To be decided

5. MAJOR OPERATING CONTROLS

5.1 MODEL ITC-120 CAMERA HEAD

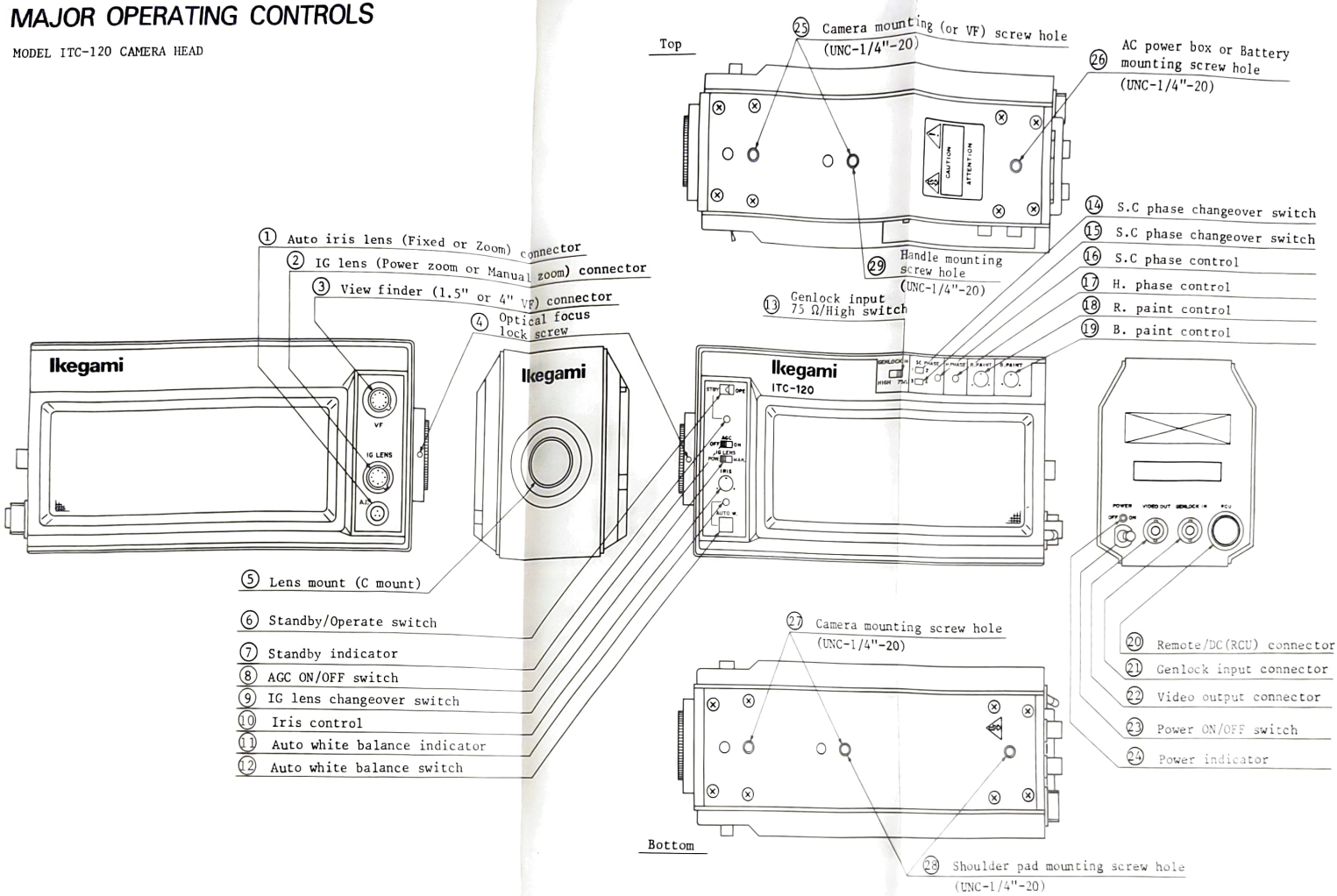

Top
25 Camera mounting (or VF) screw hole (UNC-1/4"-20)
26 AC power box or Battery mounting screw hole (UNC-1/4"-20)
29 Handle mounting screw hole (UNC-1/4"-20)
1 Auto iris lens (Fixed or Zoom) connector
2 IG lens (Power zoom or Manual zoom) connector
3 View finder (1.5" or 4" VF) connector
4 Optical focus lock screw
13 Genlock input 75 Ω/High switch
14 S.C phase changeover switch
15 S.C phase changeover switch
16 S.C phase control
17 H. phase control
18 R. paint control
19 B. paint control
Ikegami
ITC-120
5 Lens mount (C mount)
6 Standby/Operate switch
7 Standby indicator
8 AGC ON/OFF switch
9 IG lens changeover switch
10 Iris control
11 Auto white balance indicator
12 Auto white balance switch
27 Camera mounting screw hole (UNC-1/4"-20)
20 Remote/DC(RCU) connector
21 Genlock input connector
22 Video output connector
23 Power ON/OFF switch
24 Power indicator
Bottom
28 Shoulder pad mounting screw hole (UNC-1/4"-20)

Fig. 1 MODEL ITC-120 CAMERA HEAD
MAJOR OPERATING CONTROLS

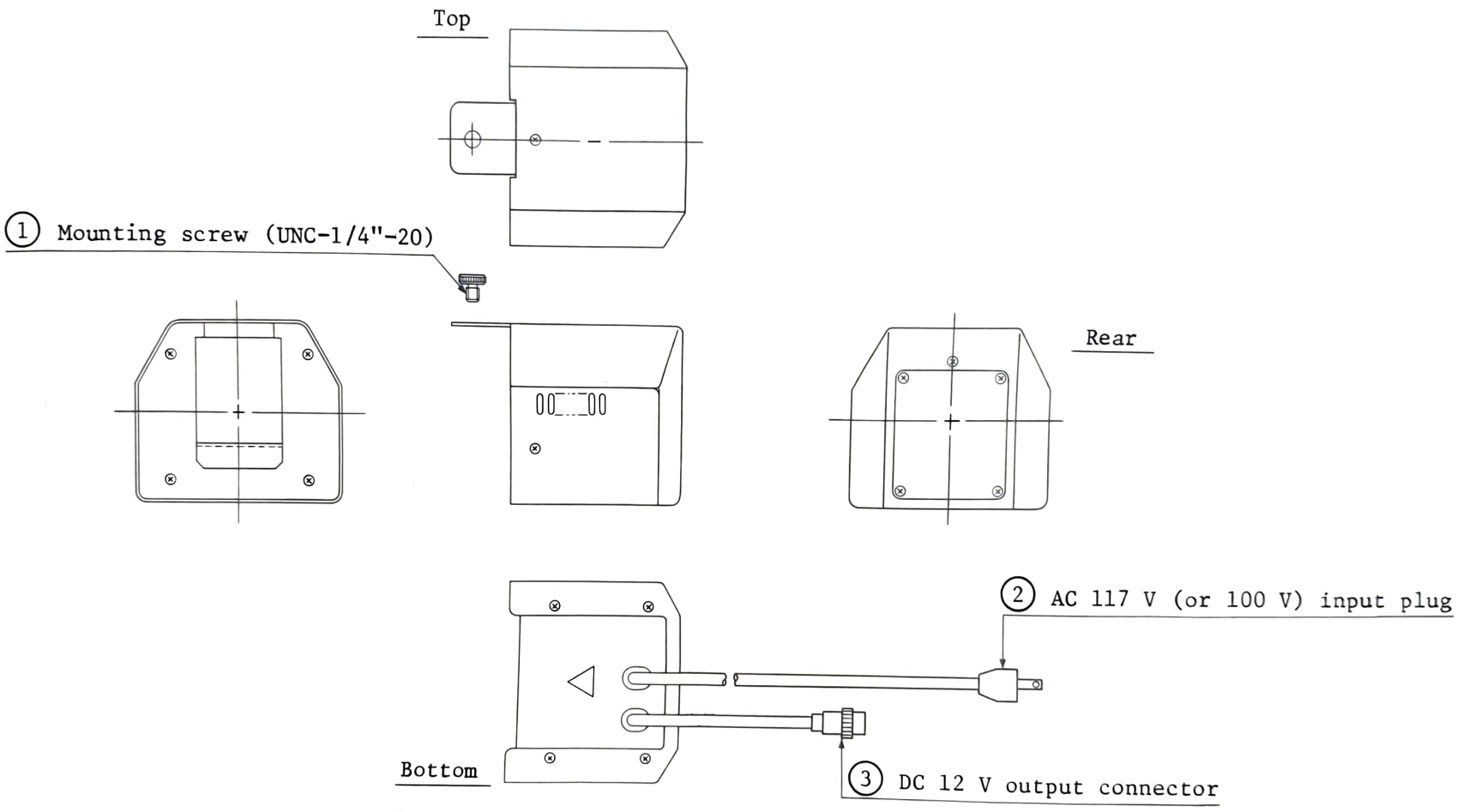


Fig. 2 MODEL AC-120 AC POWER BOX MAJOR OPERATING CONTROLS

5.3 MODEL RCU-120
REMOTE CONTROL UNIT

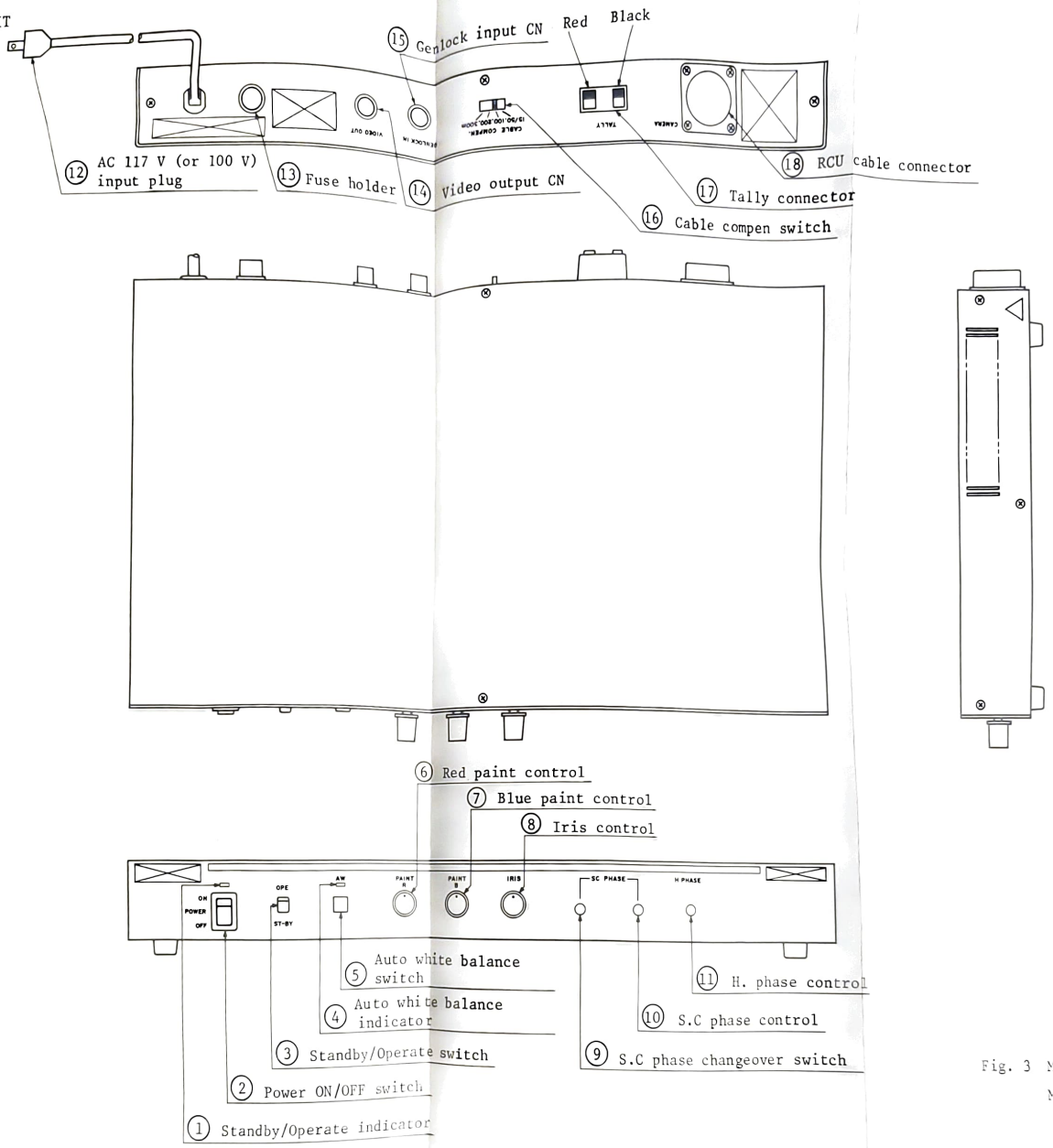


Fig. 3 MODEL RCU-120 REMOTE CONTR
MAJOR OPERATING CONTROLS

6. FUNCTION

6.1 MODEL ITC-120 CAMERA HEAD See Fig. 1

① Viewfinder connector (For VF, 10-pins CN35)

When using the 1.5-inch (VFU-15) or 4-inch (VFU-40) viewfinder, connect this connector to the connector plug on the viewfinder. When detaching the viewfinder, be sure to switch off the camera power.

② IG lens (Power zoom or Manual zoom) connector (For IG lens, 8 pins CN32)

When using power zoom or manual zoom IG lens, connect this connector to the connector plug on the lens.

③ Auto iris lens connector (For AI, 3 pins CN31)

When using fixed focus auto iris lens or auto iris power zoom lens, connect this connector to the connector plug on the lens. As the auto iris lens for Ikegami B/W CCTV camera is compatible, its lens and connector can be used. The lens connector plug below must be purchased separately.

R05-PB3M	(Manufactured by Tajimi Radio)	
Pin assignment	Ⓐ	+9 V DC
	Ⓑ	Video signal
	Ⓒ	GND

④ Optical focus lock screw (For lens mount section x 2)

Use when adjusting the lens to infinite (∞), depending on lens to be used. Loosen the left and right two lock screws, then, after adjusting the optical focus ADJ (infinite adjustment) with the lens attached, retighten the screws again.

⑤ Lens mount (C-mount)

C-mount lenses are used. Refer to the Appendix list for interchangeable lens.

⑥ Standby/Operation switch (STBY-OPE, SW2)

While awaiting shooting with the battery attached, set the switch to STBY to save power consumption and extend the battery life. With the switch set to OPE, normal shooting is possible.

⑦ Standby indicator (Green color, PLI)

When the STBY/OPE switch is set to STBY, the green lamp is lit indicating the camera is in the standby mode.

(8) AGC ON/OFF switch (AGC, SW3)

With the AGC switch set to ON, the AGC (Automatic gain control) is activated, improving sensitivity especially for low-light illumination.

If noise level in the low-light illumination is a nuisance, use the camera with this switch off.

(9) IG lens switching switch (IG lens, SW2)

Use this switch depending on lens type - manual zoom IG lens or power zoom IG lens.

(10) Iris control (IRIS, VR1)

Adjust the lens iris by turning this knob when the subject background is too bright or dark.

When raising sensitivity to the highest level in a very low-light illumination, turn this knob to the extreme right with the AGC set to ON. Ordinarily, use the camera with the knob set to the center click position.

(11) Auto white balance indicator (AUTO W, SW1)

When the auto white balance switch is set to ON for white balance adjustment, this red indicator is linked.

(12) Auto white balance switch (Red color, PL2)

When the ambient color temperature around the subject varies, the white balance can be adjusted using this switch.

(13) GENLOCK Input 75 Ω/HIGH switch (GENLOCK IN, SW3)

The GENLOCK input signal is terminated with this switch set to 75 Ω. It is switched to OFF (OPEN) with the switch set to HIGH. Be sure to set the switch to 75 Ω when using the RCU.

(14), (15) S.C. phase changeover switch (SC phase, SW1, SW2)

When GENLOCK is activated with the VBS or BBS input signal, this switch is used to shift the subcarrier phase by 90°.

(16) S.C. phase control (SC phase, VR4)

When GENLOCK is activated with the VBS or BBS input signal, this volume knob is used to vary the subcarrier phase by about 90° continuously. In combination with the S.C. phase changeover switch, the subcarrier phase can be varied by about 360° continuously.

(17) H. Phase control (H. phase, VR3)

When GENLOCK is activated with the VBS or BBS input signal, this volume knob is used to vary the horizontal sync signal by more than ±3 μs.

⑱ R. paint control (R. PAINT, VR2)

The red chroma level can be varied with this volume knob. Ordinarily, use the camera with this control set to the center click position.

⑲ B. paint control (B. PAINT, VR1)

The blue chroma level can be varied with this volume knob. Ordinarily, use the camera with this control set to the center click position.

⑳ Remote/DC (RCU) connector (RCU, 12 pins CN36)

When using the AC power box (AC-120) or battery bracket, connect the camera to this connector. DC power is supplied through this connector.

When using the remote control unit (RCU-120), the camera is connected to a dedicated camera cable through which the DC power and the signal are supplied. When connecting or disconnecting this connector, be sure to switch off the power.

㉑ GENLOCK input connector (GENLOCK IN, CN34)

For GENLOCK, connect the VBS or BBS input signal to this connector.

㉒ Video output connector (VIDEO OUT, CN33)

The video output signal is output from this connector.

㉓ Power ON/OFF switch (Power, SW1)

This switch is for switching on or off the camera power supply. When the know is pulled and released with the knob pulled, the switching is locked ON or OFF.

㉔ Power indicator (Red color, PL1)

When the power is switched on, the indicator is lit red.

㉕ Camera mounting (or VF) screw hole

Use for the 1.5-inch VF (VFU-15), 4-inch VF (VFU-40) or installing the camera.

㉖ AC power box or battery mounting screw hole

Use for mounting the AC power box (AC-120) or battery bracket.

㉗ Camera mounting screw hole

Use for mounting the camera on a tripod.

㉘ Shoulder pad mounting screw hole

Use for mounting the shoulder pad on the camera.

(29) Handle mounting screw hole

Use for mounting the handle on the camera.

6.2 MODEL AC-120 AC POWER BOX See Fig. 2

(1) Mounting screw

Use for mounting the AC power box (AC-120) on the camera.

(2) AC 117 (or 100 V) input plug

The power supply plug. Connect to the AC outlet when using the camera.

(3) DC 12V output connector

The connector through which the DC power is supplied. Connect to the camera RCU connector.

6.3 MODEL RCU-120 REMOTE CONTROL UNIT See Fig. 3

(1) Standby/Operation indicator (Green or Red color, D102)

The indicator is lit green in the standby mode or red in the operation mode linking the Standby/Operation switch.

(2) Power ON/OFF switch (Power, SW 3)

The power supply switch. The power is switched on with the POWER ON and the Standby/Operation indicator on the switch is lit.

(3) Standby/operation switch (STBY-OPE, SW102)

This switch switches the standby remote mode and operation mode. With the STBY, the remote control unit is set to the standby mode. With the OPE, the mode is switched to the normal operation.

(4) Auto white balance indicator (Green color D101)

The indicator is lit green linking the auto white balance switch.

(5) Auto white balance switch (AW, SW101)

A similar operation is made on the RCU as with the auto white balance switch on the camera. It is used for adjustment when the ambient color temperature around the subject varies.

(6) Red paint control (PAINT R, VR103)

With this control knob, the red chroma level is varied. Usually, set to the center click position for use. When the RCU is connected, adjustment from the camera side is impossible.

⑦ Blue paint control (PAINT B, VR102)

With this control knob, the blue chroma level is varied. Ordinarily, set to the center click position for use. When the RCU is connected, adjustment from the camera side is impossible.

⑧ Iris control (IRIS, VR101)

A similar operation is made on the RCU as with the iris control on the camera. It is used for adjustment when the subject background is too bright or dark. It can be used to raise the sensitivity to the extreme by turning the knob clockwise fully in a very low-light illumination. Ordinarily, set to the center click position for use.

⑨ S.C. phase changeover switch (S.C. PHASE, SW1)

In GENLOCK, the subcarrier phase can be switched to 0°, 90°, 180° and 270° by turning the switch to the right (clockwise).

⑩ S.C. phase control (S.C. PHASE, VR3)

In GENLOCK, the subcarrier phase can be varied by about 90° continuously.

⑪ H. phase control (H. PHASE, VR1)

In GENLOCK, the horizontal sync signal phase can be varied by more than +3 μs.

⑫ AC 117 V (or 100 V) input plug

The power supply plug. Connect to the AC outlet for use.

⑬ Fuse holder (FUSE, F5)

Be sure to use a 1.5 A fuse.

⑭ Video output connector (VIDEO OUT, CN12)

The camera video output signal is output from this connector.

⑮ GENLOCK input connector (GENLOCK IN, CN11)

For GENLOCK, connect the VBS or BBS input signal to this connector.

⑯ Cable compensation switch (CABLE COMPEN., SW2)

It switches the compensation amount of a dropping video signal frequency response and gain depending on length of the cable connecting the camera and RCU. Use the switch depending on cable length.

⑰ Tally connector (TALLY, CN9)

Use this connector to light the tally lamp when using the 1.5-inch VF (VFU-15) or 4-inch VF (VFU-40). The tally lamp is lit when the connector's red and black terminals are shorted. When using this connector, be sure to set the Standby/Operation switch to OPE. (The standby remote and tally cannot be used concurrently).

⑱ RCU cable connector (CAMERA, 16-pin CN10)

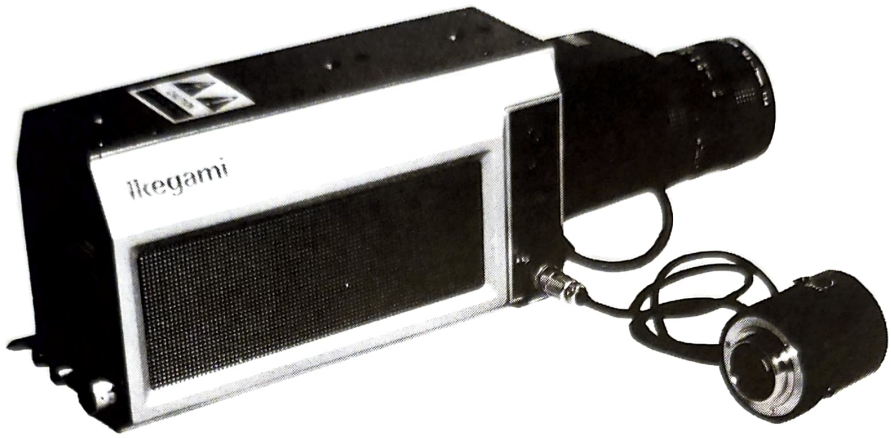
The camera cable connecting the camera and the RCU is connected to this connector.

When connecting or disconnecting this connector, be sure to switch off the camera power.

7. INSTALLATION PRECAUTIONS/CONNECTIONS

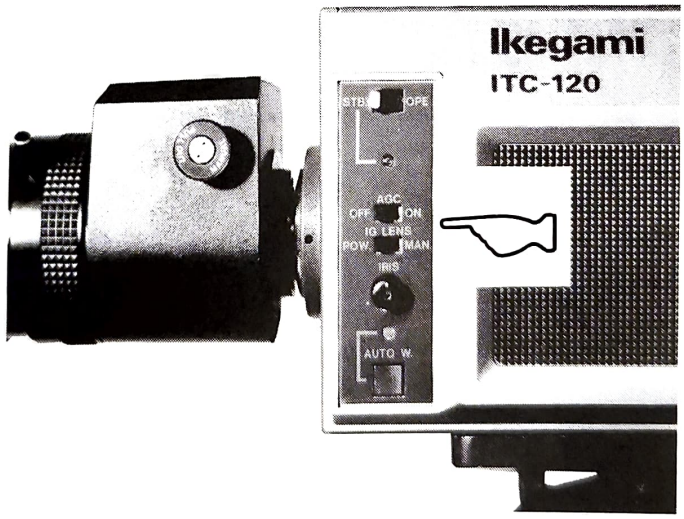
7.1 Connecting the Camera Head (ITC-120)

7.1.1 Mounting the lens

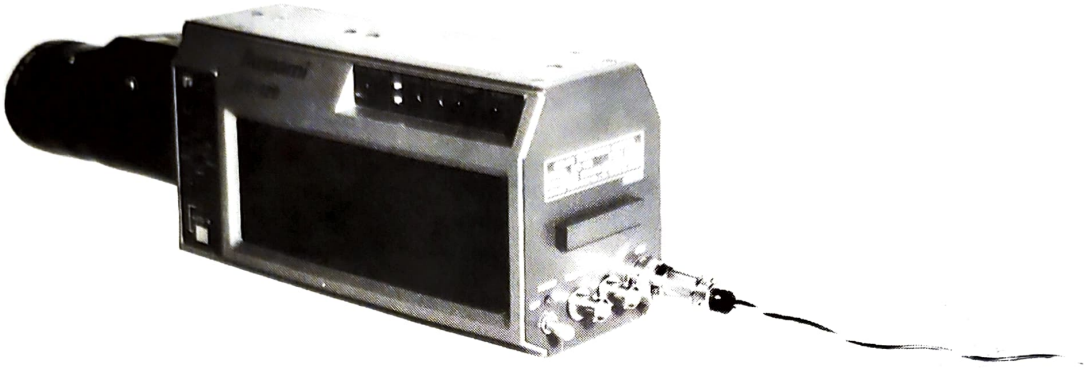


Fixed focus auto iris lens or auto iris power zoom lens is connected to the auto iris lens connector.

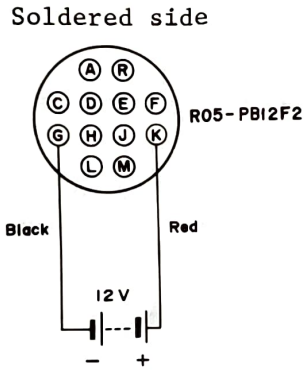
Connect the manual zoom IG lens or power zoom IG lens to the IG lens connector and set the IG lens switch to the unit of the lens connected.



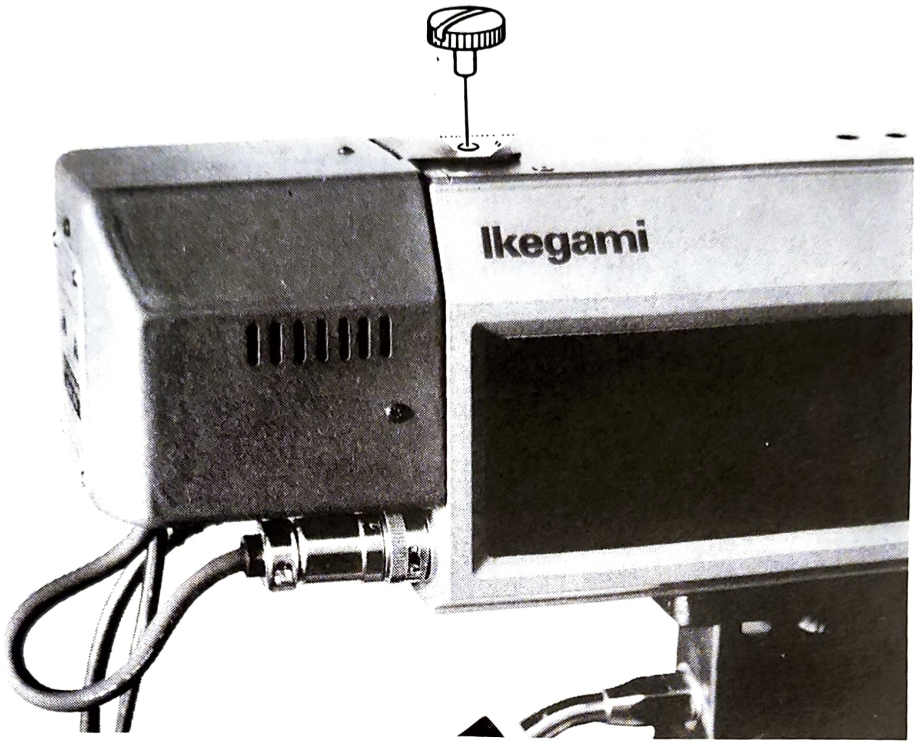
7.1.2 Connecting from the DC power supply



Wire on the provided remote/DC (RCU) connector plug as is shown in the following schematic and connect to the Remote/DC (RCU) connector.



7.1.3 Connecting the AC power box (AC-120)

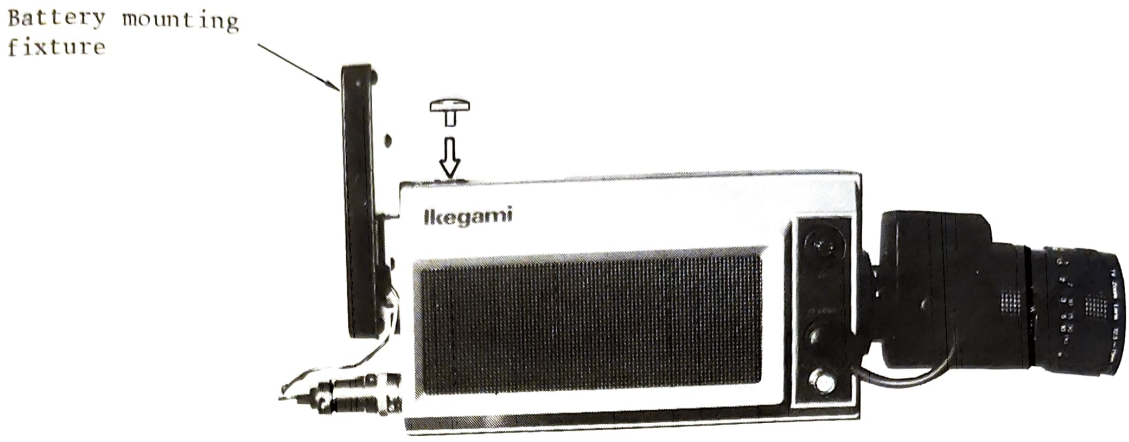


Mount the AC power box to the rear panel of the camera and fix using the mounting screw.

Then, connect the DC 12 V output connector to the RCU connector and insert the AC 117 V (or 100 V) input plug to the AC outlet.

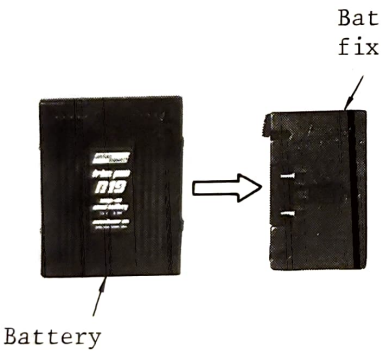
Note: The AC power box can cover the camera head and the 1.5" VF, but cannot cover the 4" VF.

7.1.4 Connecting the battery



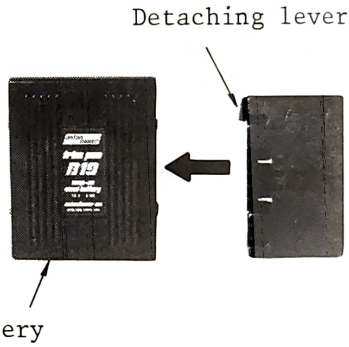
Mount the battery mounting fixture on the camera read panel and fix it with the mounting screw. Then, connect the DC 12V output connector to the RCU connector.

Mounting the battery



Insert the three projections on the battery bottom to the battery fixture guide and move the battery in the direction of the arrow.

Removing the battery



With the detaching lever pulled downward, move the battery in the direction of the arrow to remove from the fixture.

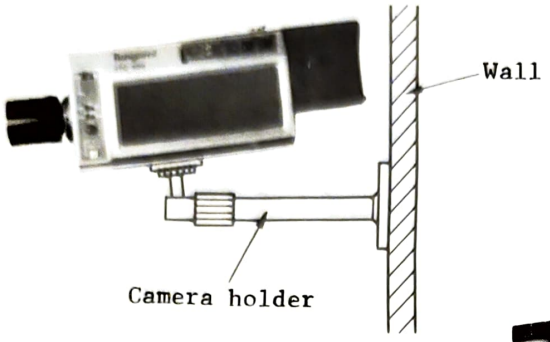
7.1.5 Mounting the camera on a tripod or camera holder

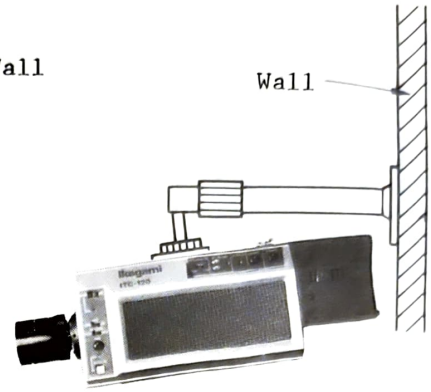
① Mounting on a tripod

Mount the tripod to the camera mounting screw hole at the camera bottom center. When the center gravity is shifted forward with a heavy lens installed, it is possible to mount the tripod to the camera mounting screw hole at the front camera bottom.

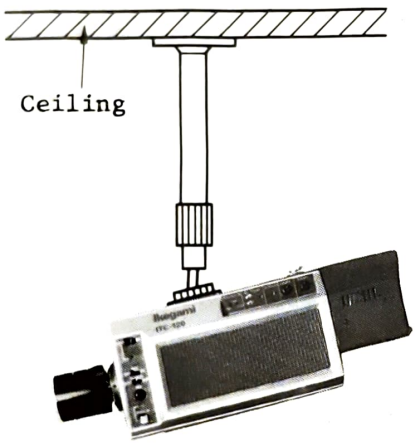
② Mounting on a camera holder

Mounting on the wall

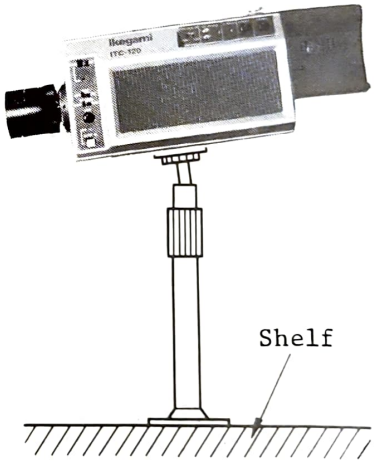




Mounting to the ceiling

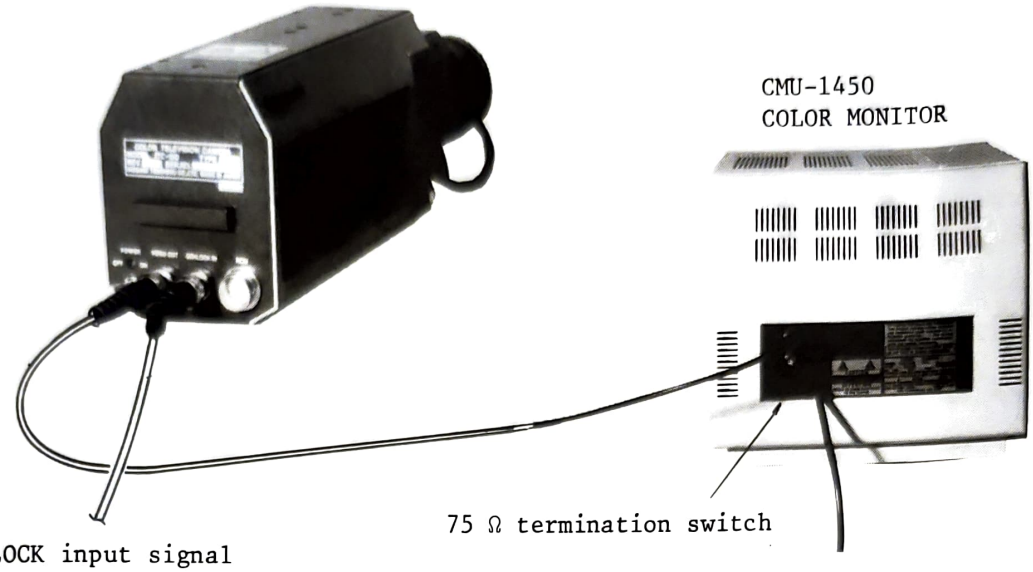


Mounting to a shelf



Connect the camera holder to the center or front camera mounting screw hole on the bottom.

7.1.6 Connecting to a color monitor and connecting of the GENLOCK input signal



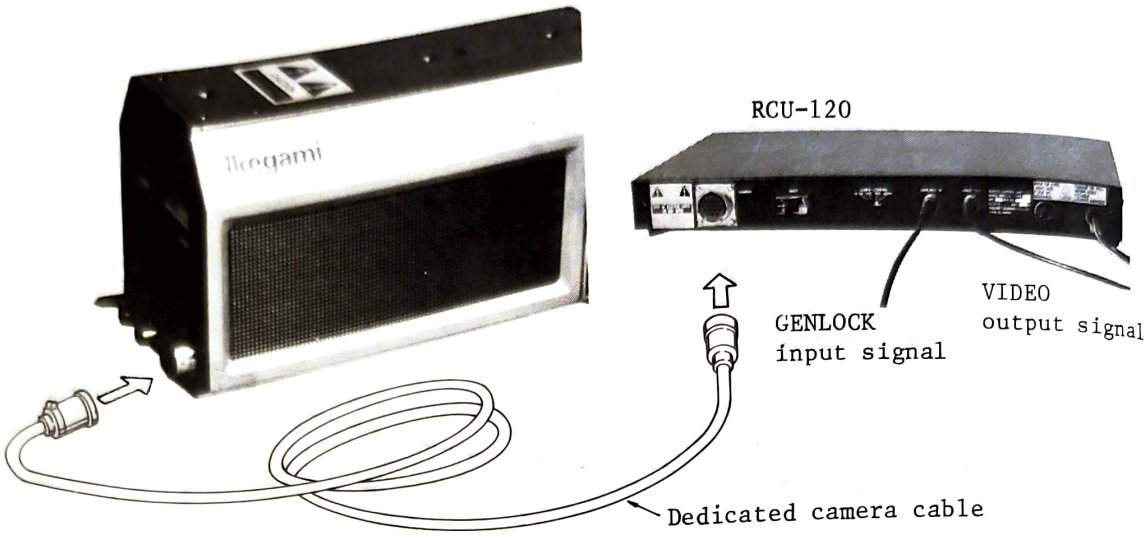
① **Connecting to a color monitor**

Connect the camera VIDEO OUT and a color monitor VIDEO IN with a coaxial cable and switch the monitor 75 Ω termination switch to ON.

② **Connecting the GENLOCK input signal**

Connect the GENLOCK input signal to the camera GENLOCK input connector.

7.1.7 Connecting the remote control unit (RCU-120)



Connect to the camera remote/DC (RCU) connector on the camera side and to the RCU cable connector on the RCU side using a dedicated camera cable and switch the CABLE COMPEN. Switch depending on cable length.

7.1.8 Connecting the viewfinder

① Connecting the 1.5-inch VF (VFU-15)

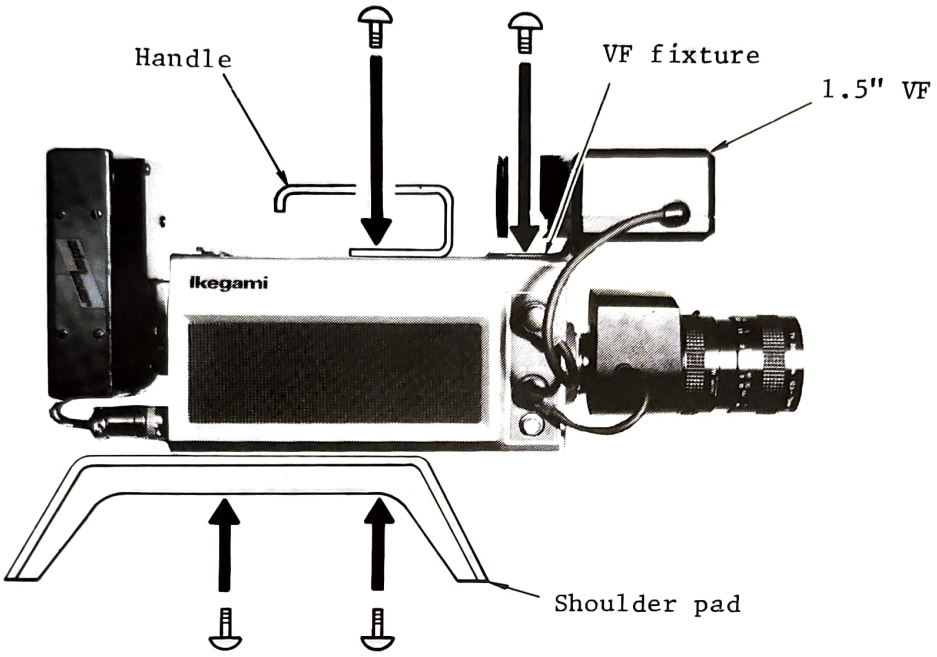
Fix the VF mounting fixture to the viewfinder with the screw; then mount the viewfinder on the front top of the camera and fix using the mounting screw; then connect the viewfinder connector plug to the viewfinder connector.

② Connecting the handle

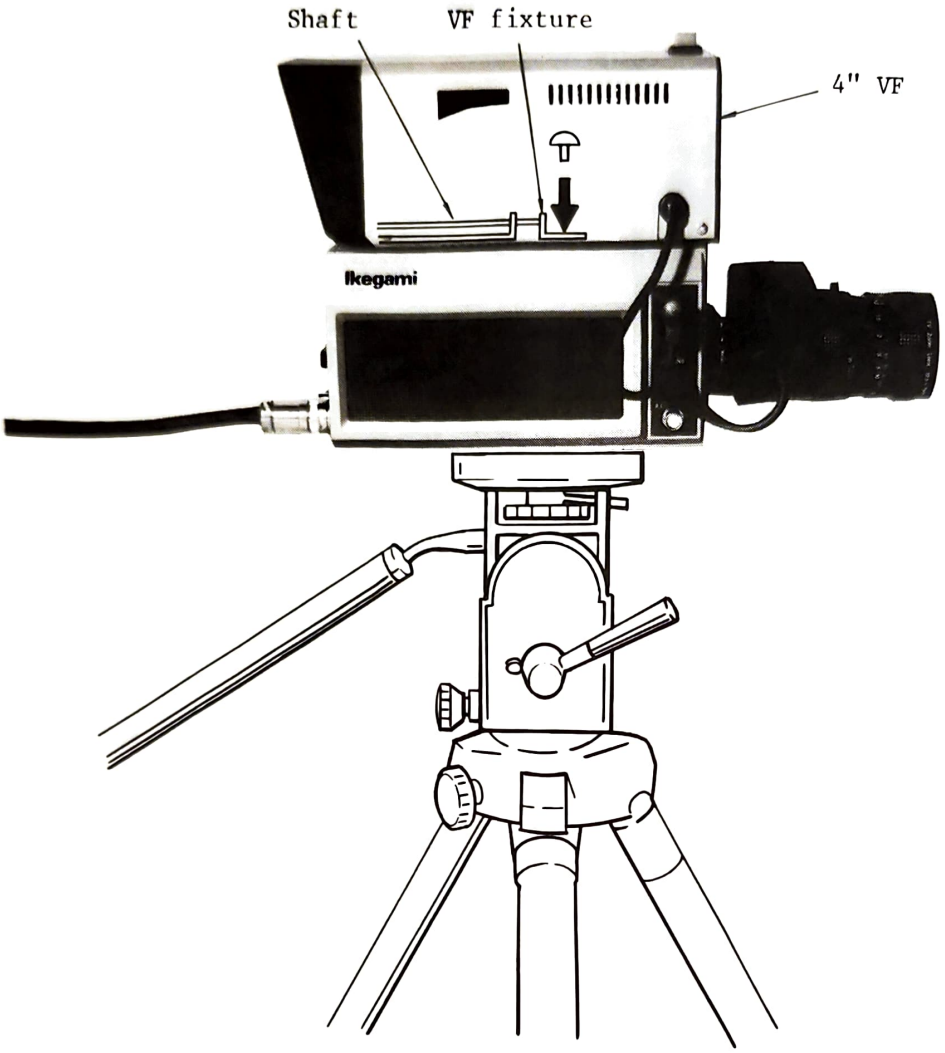
Mount the handle on the center top of the camera and fix using the mounting screw.

③ Attaching the shoulder pad

Attach the shoulder pad to the back from center bottom of the camera bottom and fix using the dedicated screws.



④ Connecting the 4-inch VF (VFU-40)

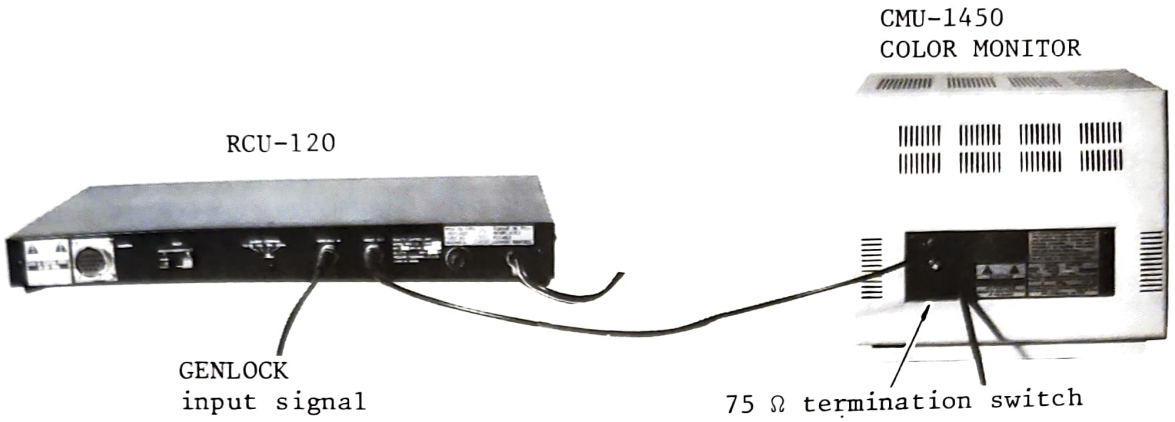


Mount the VF fixture on the center top of the camera and fix using the mounting screw. Mount the viewfinder on the camera so that the VF fixture can enter into the VF chassis square hole, turn the VF shaft and fix the viewfinder to the VF fixture. Then, connect the viewfinder connector plug to the viewfinder connector.

Note: When this 4-inch viewfinder is connected to the RCU, the camera cable can be extended up to 50 meters. However, it is impossible to connect the 4-inch viewfinder when the AC power box is used.

7.2 Connecting the Remote Control Unit (RCU-120)

7.2.1 Connecting to color monitor and connecting the GENLOCK input signal



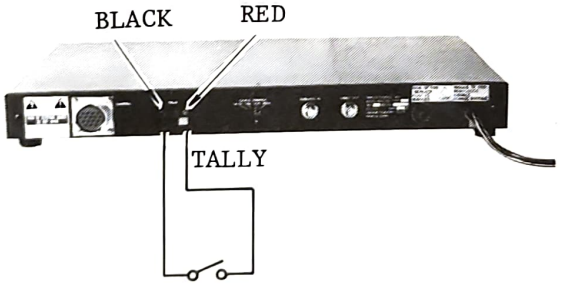
① Connecting to color monitor

Connect the camera VIDEO OUT and the color monitor VIDEO IN with a coaxial cable and set the monitor 75 Ω termination switch to ON.

② Connecting the GENLOCK input signal

Connect the GENLOCK input signal to the RCU GENLOCK IN.

7.2.2 Connecting the tally



Set the SW2 of the DEF AMP PWB in the camera head to TALLY. Connect the control wire switching the TALLY on/off to the TALLY connector on the RCU rear panel. At this time, be sure to set the Standby/Operation switch to OPE.

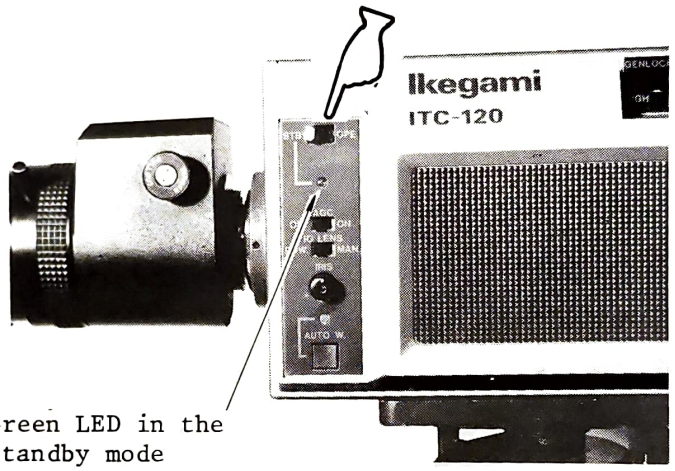
8. OPERATING PROCEDURE

8.1 Operating the Camera Head (ITC-120)

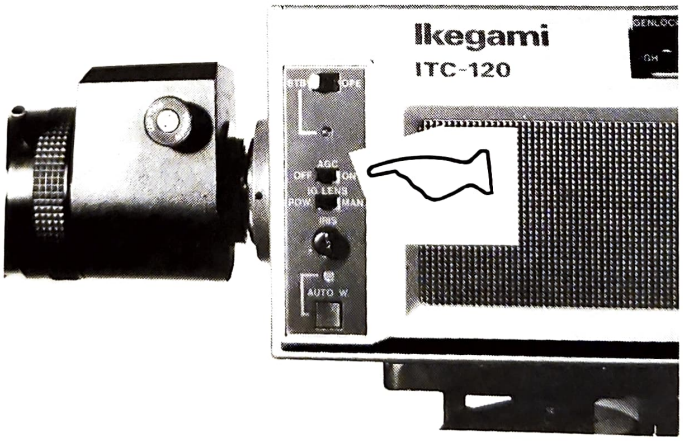
8.1.1 Using the standby switch

① Switch the power on and set the Standby/Operation switch to OPE for ordinary camera operation.

② When awaiting shooting with the battery mounted, setting the switch to the Standby side will save power and extend the battery life. As the camera tube is pre-heated in the standby mode, the image on the monitor screen will be displayed when the switch is set to OPE. In the standby mode, the LED is lit green.



8.1.2 Operating when the IG lens is used



① Depending on type of the IG lens used, set the IG lens changeover switch to either the Power zoom (POW) or Manual zoom (MAN) side.

② When shooting in low-light illumination, set the AGC ON/OFF switch to ON to gain a higher sensitivity automatically.

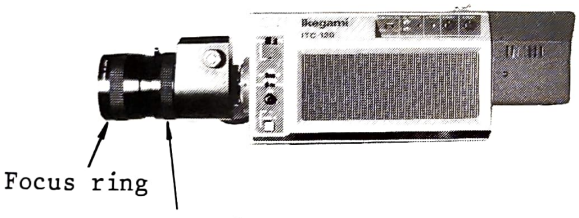
When the noise level is a nuisance in low-light illumination and high sensitivity is not desired, set the switch to OFF.

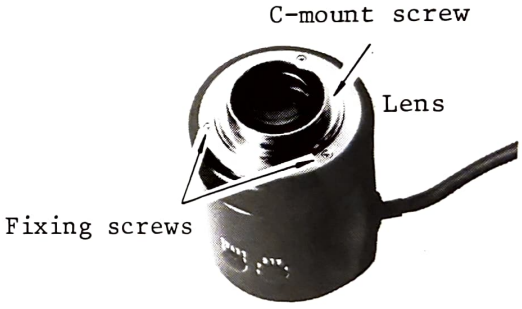
③ When the subject background is too bright and the subject is shot too dark, turn the iris control knob to the right. When the subject background is too dark and the subject is shot too bright, adjust by turning the iris control knob to the left. When shooting in a very low-light illumination and desiring to gain the maximum sensitivity, turn the knob fully to the right with the AGC set to ON. Ordinarily, set the knob to the center click position.

④ For infinite adjustment of the camera, shoot a remote scene and turn the zoom right to the W side for zooming in. Then, turn the focus ring to put the subject in focus and turn the zoom ring to the T side for zooming out; then loosen the optical focus lock screw and rotate the camera C-mount together with the lens to focus.

By repeating this operation a few times, confirm that the focus is not out of place both in zooming in and out, and tighten the optical focus lock screw.

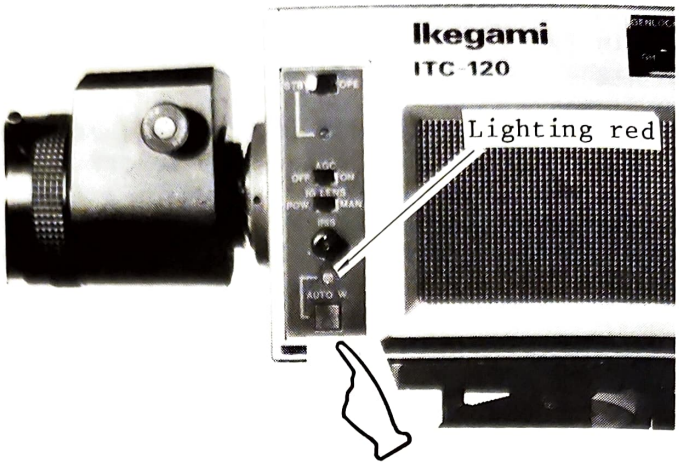
Then, loosen the lens C-mount fixing screws, turn the C-mount screw to see that the lens is mounted on the camera properly and tighten the fixing screws.





8.1.3 Adjusting the auto white balance

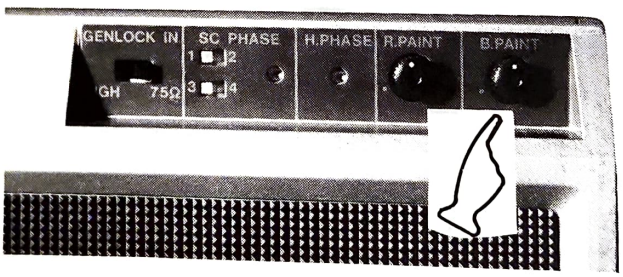
① When the ambient color temperature around the subject is changed because of a change in the shooting place or lighting, shoot an entirely white subject and adjust the white balance after pressing the auto white balance switch.



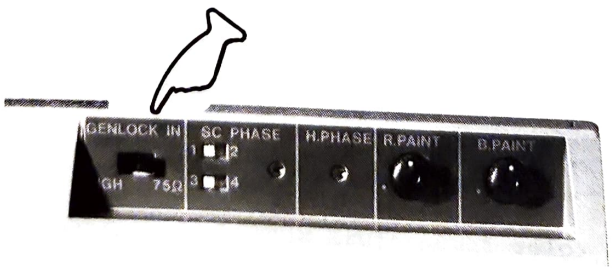
(2) With this switch kept pressed, a continuous lighting of the red LED indicates the white balance has been adjusted. Blinking of the indicator means the white balance has not been adjusted yet. In this instance, re-adjust the color temperature, video level, etc., and repeat the above operation.

(3) As the auto white balance circuit has memory backup, the white balance once adjusted is stored for more than one month even if the power supply is switched off.

(4) After the white balance adjustment, the red or blue can be fine-adjusted by turning the R paint control or B paint control knob. However, set the knobs to the center click position for ordinary use.



8.1.4 Operating during GENLOCK



① With the GENLOCK input signal connected to the GENLOCK input connector, set the GENLOCK input 75Ω /HIGH switch to 75Ω. When bridge-connecting the GENLOCK input signal, set the switch to HIGH. However, be sure to set the switch to 75Ω when the RCU is used.

② During GENLOCK, the subcarrier phase can be varied by about 360° continuously using both the S.C. phase changeover switch and S.C. phase control knob. With the S.C. phase changeover switch, the subcarrier phase can be varied by 90° with the following switch positions:

Switch position	Phase angle
1,3	0°
1,4	90°
2,3	180°
2,4	270°

With the S.C. phase control knob, the subcarrier phase can be varied by about 90° continuously.

③ During GENLOCK, the horizontal sync signal phase is varied by more than +3 μs (advancing) or -3 μs (delaying) continuously.

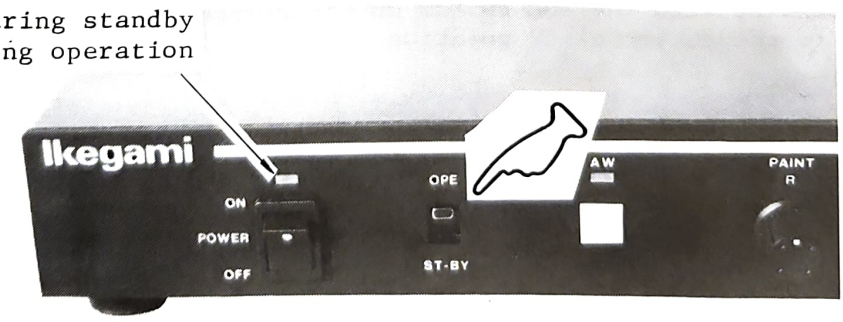
8.2 Operating the Remote Control Unit (RCU-120)

8.2.1 Using the standby switch

① Switch the power on and set the Standby/Operation switch to OPE for ordinary normal operation.

② The RCU standby switch is for the standby remote control and it does not save power, unlike the camera head standby switch. The standby remote control is designed to preheat the camera tube, lower the high voltage and extend the camera tube life. It switches the power on/off and calls up the image on the monitor screen instantly when the switch is set to OPE after the standby mode. The LED lights green in the standby mode and red in the operation mode.

Note: When using this standby switch, be sure that nothing is connected with the TALLY connector.



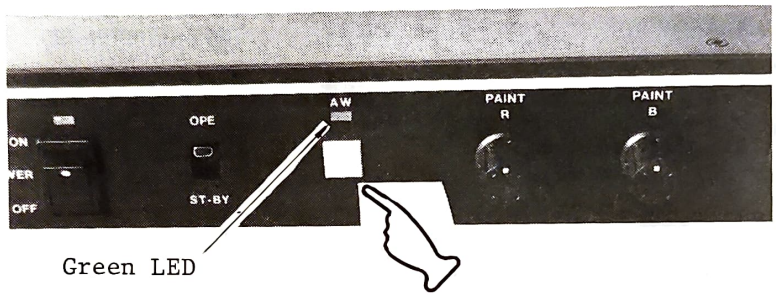
8.2.2 Adjusting the auto white balance

(1) A similar operation is made on the RCU as with the auto white balance switch on the camera.

When the ambient color temperature around the subject varies, shoot an entirely white scene with the camera and adjust the white balance with the auto white balance switch pressed. Keeping this switch pressed will keep the indicator lit continuously, indicating the white balance has been adjusted. Continuous blinking of the indicator means the white balance has not been adjusted. In this case, re-adjust the color temperature, video level, etc.

(2) After the white balance adjustment, when the red or blue color needs adjusting, do this by turning the R paint control knob or B paint control knob. However, the camera side R and B paint controls do not operate when the RCU is connected to the camera.

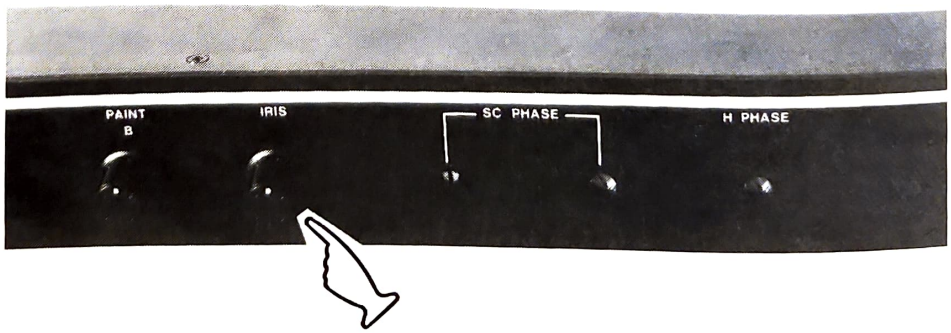
Ordinarily, set the knobs to the center click positions.



8.2.3 Using the iris control knob

This control is possible either on the camera or RCU even when the RCU is connected. However, either of them must be set to the center click position.

When the subject background is too bright, turn the control knob clockwise for lens iris adjustment or vice versa to obtain the optimum subject image. When gaining maximum sensitivity in very low-light illumination, turn the knob fully clockwise with the AGC switch on the camera set to ON. Ordinarily, set the knob to the center click position.



8.2.4 Operating during GENLOCK

(1) When GENLOCK is activated with the VBS or BBS input signal, the subcarrier phase can be shifted by about 360° continuously using both the S.C. phase changeover switch and the S.C. phase control knob. Turning the S.C. phase changeover switch clockwise shifts the subcarrier phase to 0°, 90°, 180° and 270°. Turning the S.C. phase control knob will vary the phase by about 90° continuously.

(2) During GENLOCK, the horizontal sync signal can be varied by more than 0 to +3 μs (advancing) using the H phase control knob. When activating GENLOCK from the RCU, the BBS signal is output to the camera unit and this signal activates the camera GENLOCK.

Therefore, when the H phase control on the camera is adjusted to the - direction (delayed), no compensation - is possible with the RCU control knob, for the delay because of cable length. That means require that the horizontal sync signal phase difference on the camera must be adjusted to 0.

9. SPECIFICATIONS

9.1 MODEL ITC-120 SPECIFICATIONS (NTSC)

1)	Pick up system	Single carrier frequency separate system.
2)	Pick up tube	2/3 inch NEWVICON S4165 (sta-Mag type) with stripe filter.
3)	Carrier frequency of stripe filter	5.0 MHz
4)	Scanning system	525 lines, 60 Fields/30 frames/sec. 2:1 interlace, NTSC standard (RS-170A)
5)	Sync system Internal External	 Crystal oscillation Genlock by VBS or BBS input.
6)	Aspect ratio	(H)4 : (V)3
7)	Video output	Composite VBS 1.0 Vp-p/75 Ω One output.
8)	Genlock video input	VBS 1.0 Vp-p/75 Ω or High impedance. BBS 0.45 Vp-p/75 Ω or High impedance.
9)	Horizontal resolution	350 TV lines (at center)
10)	Signal to noise ratio	Better than 44 dB (p-p/rms) (Y channel) at F4 1000 Lux, with 4.2 MHz LPF
11)	Scene illumination Standard Minimum	 1,000 Lux (100 fc) at F4 3200°K 89.9% reflectance. 10 Lux (1.0 fc) approx at F1.2 3200°K 89.9% reflectance.
12)	Deflection distortion	Less than ±1% within a circle of picture height. Less than ±2% within a circle of picture height.
13)	Auto iris circuit	Built in
14)	Auto white balance circuit	Built in
15)	Lens mount	C-Mount
16)	Power requirement	DC 12 V ±1 V 0.9 A approx
17)	Power consumption	11 watts approx
18)	Ambient temperature	-5°C to +45°C
19)	Dimensions	90 mm (W) x 110 mm (H) x 210 mm (D) 3.54" (W) x 4.33" (H) x 8.26" (D)
20)	Weight	1.4 Kg approx. 3.1 lbs approx.
21)	Camera mount	1/4" Tapped hole (both upper and bottom sides)

22) Connectors	a.	For Video output	BNC x 1
	b.	For Genlock input	BNC x 1
	c.	For Remote/DC (RCU)	12P x 1
	d.	For View finder in/out	10P x 1
	e.	For IG Zoom lens in/out	8P x 1
	f.	For Auto iris lens out	3P x 1

23) Controls

a. Stand-by/Operate switch
b. AGC ON-OFF switch
c. IG Lens changeover switch
d. Auto white balance switch
e. Power switch
f. Genlock in 75 Ω/High changeover switch
g. S.C. phase switch
h. S.C. phase control volume
i. Hor. phase control volume
j. R-paint control volume
k. B-paint control volume
l. Iris control volume

9.2 AC Power Box for ITC-120

MODEL AC-120 SPECIFICATIONS

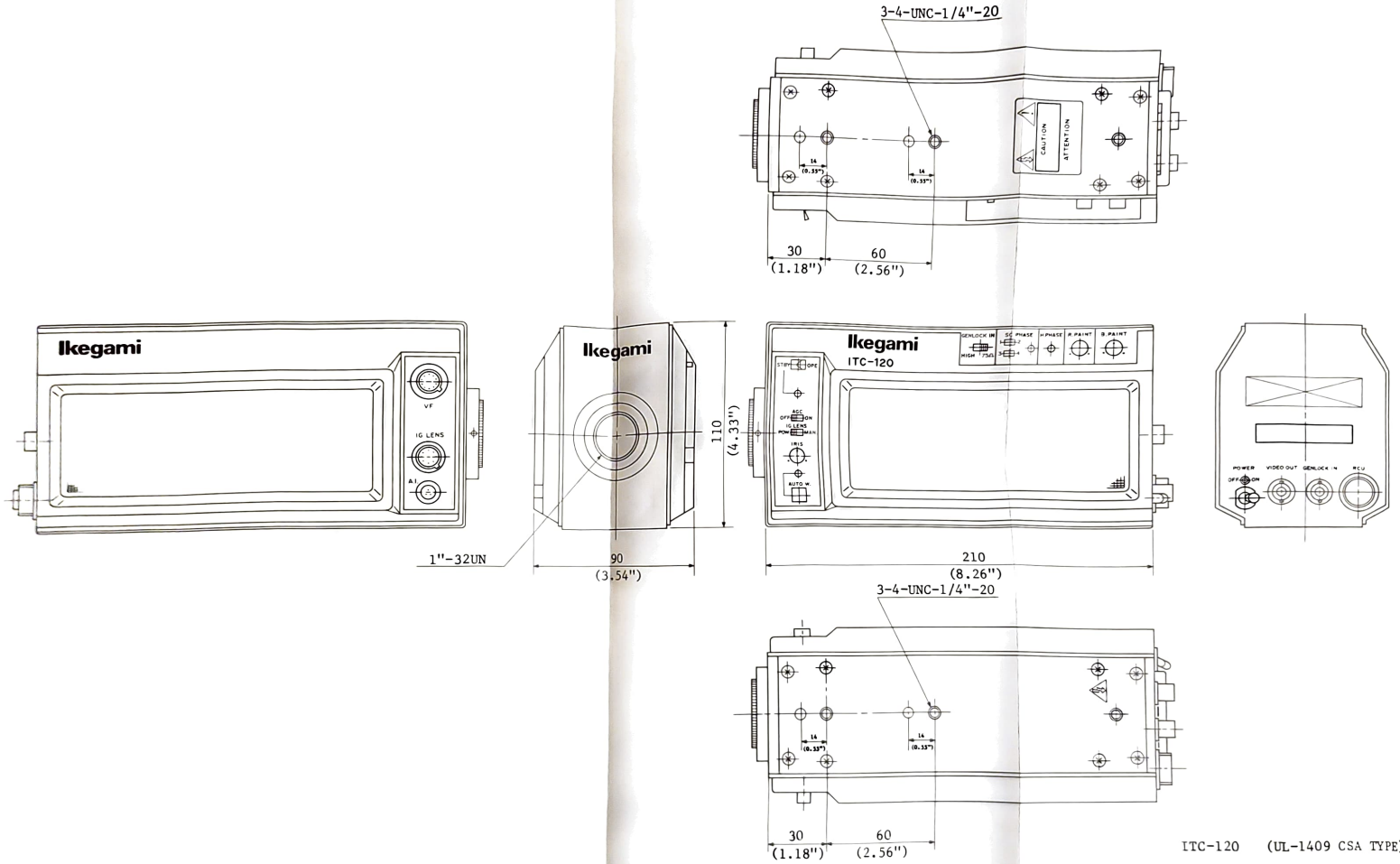
1)	Power requirement	AC 117 V 50/60 Hz
2)	Power consumption	19 watts approx. (together with camera head)
3)	Dimensions	90 mm (W) x 79 mm (H) x 80 mm (D) 3.54" (W) x 3.11" (H) x 3.15" (D)
4)	Weight	1.1 Kg approx. 2.4 lbs approx.
5)	AC power cord length	1.8 m

9.3 Remote Control Unit for ITC-120

MODEL RCU-120 SPECIFICATIONS (NTSC)

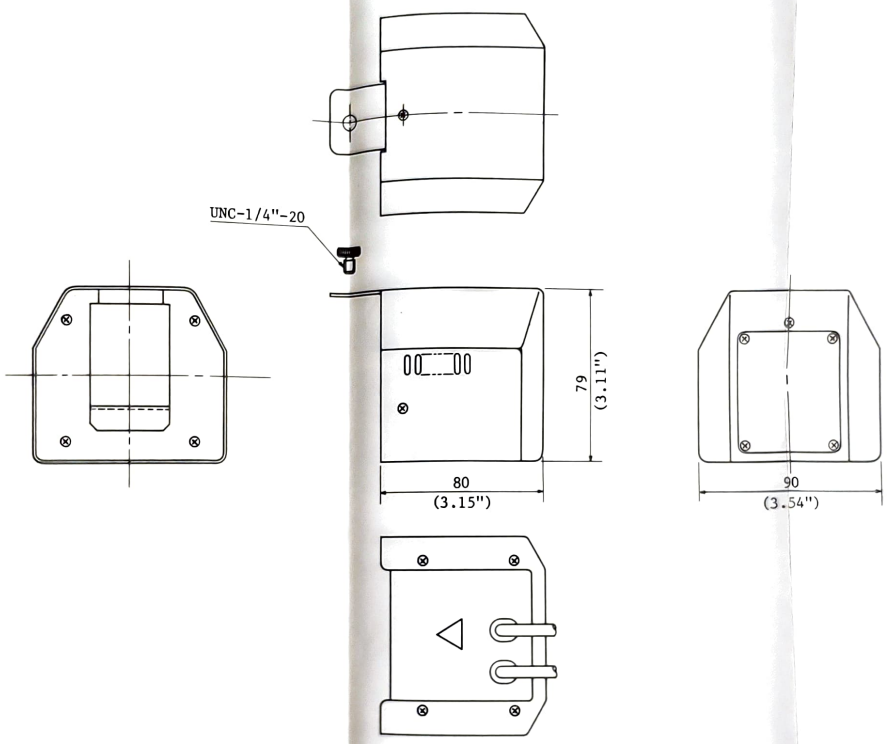
1)	Power requirement	AC117 V 50/60 Hz
2)	DC output	+12 V, 1 A, with remote sensing
3)	Genlock Input	VBS 1.0 Vp-p/75 Ω, or BBS 0.45 Vp-p/75 Ω (with phase control)
4)	Video Output	Composite VBS 1.0 Vp-p/75 Ω, one-output, built-in cable compensation circuit
5)	Remote control function	a) Auto white balance (Push-button, with LED indicator) b) Paint control for R-channel (by a volume) c) Paint control for B-channel (by a volume) d) Iris control (by a volume, for IG lens)

6)	RCU cable extension	300 m max. (15/50, 100, 200, 300 m switchable)
7)	Power consumption	33 Watts approx.
8)	Ambient Temperature	-5°C to +45°C
9)	Dimensions	441 mm (W) x 44 mm (H) x 248 mm (D) 17.36" (W) x 1.732" (H) x 9.764" (D)
10)	Weight	5.3 Kg approx. 11.7 lbs approx.
11)	Connectors	a) For RCU cable 16P x 1 b) For genlock input BNC x 1 c) For video output BNC x 1 d) For tally 2P x 1
12)	Controls	a) Power switch x 1 b) Auto white balance switch x 1 c) Paint control volume (for R) x 1 d) Paint control volume (for B) x 1 e) Iris control volume x 1 f) Cable compensation switch x 1 g) Stand-by/Operate switch x 1 h) SC phase switch x 1 i) SC phase control volume x 1 j) H phase control volume x 1



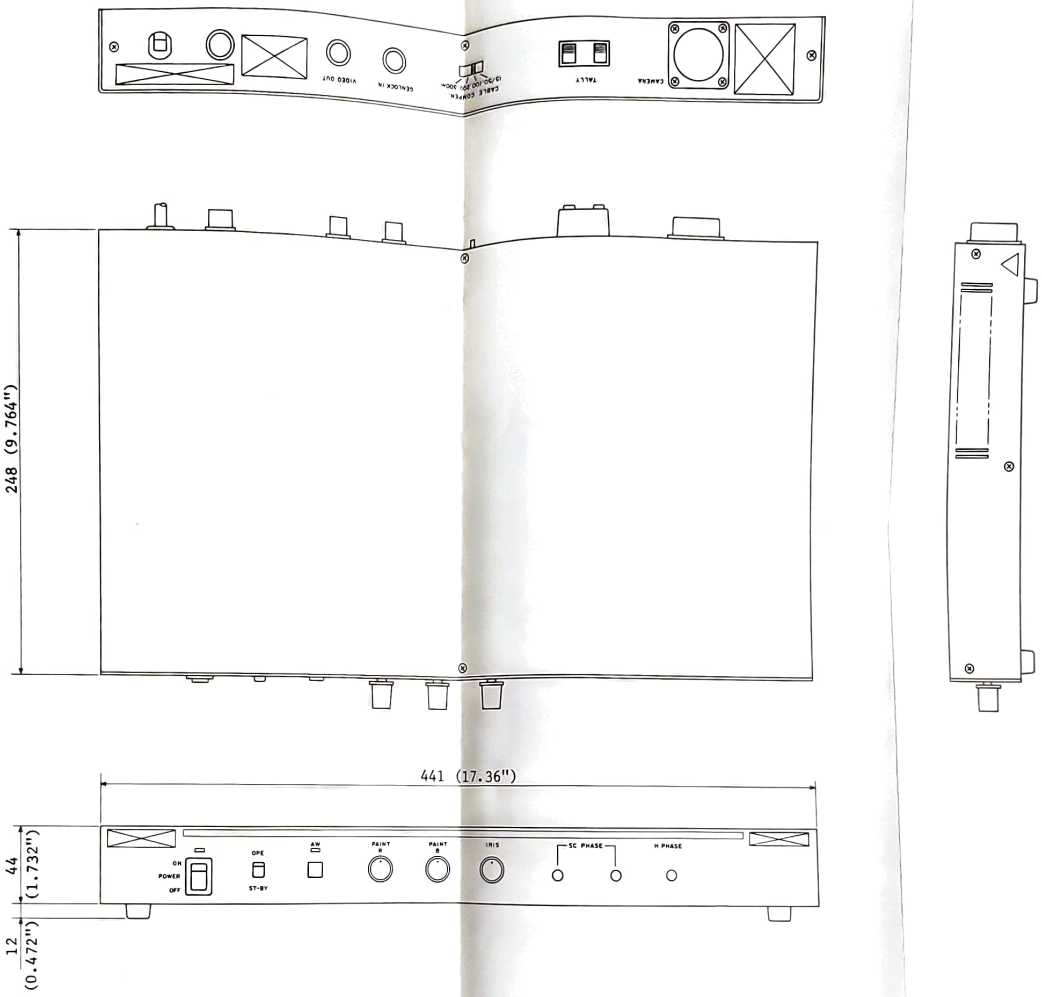
ITC-120 (UL-1409 CSA TYPE)

EXTERNAL APPEARANCE



AC-120 (UL-1409, CSA)

EXTERNAL APPEARANCE



RCU-120 (UL/CSA)

EXTERNAL APPEARANCE

• Design and specifications are subject to change for improvement without notice.

Ikegami

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